

REMARKS

Claims 1, 3-6, 8-12 were pending in this application before this Response. Applicant has amended claims 1 and 6 to more clearly define the invention. More specifically, as applicant has previously pointed out, the embodiments of the present invention covered by current claims have a copper foil with at least one smooth surface having an R_z of less than about 1 μm .

REJECTION UNDER 35 U.S.C. § 102

Applicant respectfully requests reconsideration of the rejection of claims 1, 3-5, 6, 8-12 under 35 U.S.C. § 102(b) as being anticipated by Lin, (U.S. Pat. No. 5,071,520). Claims 1 and 3-5 require a copper foil with a “smooth surface”, and claims 6 and 8-12 require an article comprising a copper foil with a “smooth surface”. This is not anticipated by the Lin et al. ‘520 patent. Lin discloses either an electrodeposited foil (which by definition provides a rough, not smooth, surface), or rolled foil that has been subjected to roughening treatment. Even if the Office Action were correct that the coating in Lin et al. ‘520 patent “resembles” the claimed coating, the Lin et al. ‘520 patent cannot anticipate a copper foil with a smooth surface, or an article including copper foil with a smooth surface.

Regarding the differences between the claimed invention, and the Lin et al. ‘520 coating, the Declaration of Brenneman establishes that the products of the Lin et al. ‘520 patent and of the claimed invention are different. The Office Action indicates that the differences may not be readily apparent to the Examiner. Applicants advise that Exhibit 1 photomicrograph show a plurality of white dots disbursed over the surface of the sample that Dr. Brenneman identifies as bumps. The Exhibit 2 photomicrograph

does not show these dots. Applicants believe that this is representative of the smooth surface of the starting material (R_z less than about $1\text{ }\mu\text{m}$), that is a feature of the claimed invention and not of the prior art represented by the Lin et al. '520 patent.

REJECTION UNDER 35 U.S.C. § 103

Applicant respectfully requests reconsideration of the rejection of claims 1, 3-5, 6, 8-12 under 35 U.S.C. § 103(a) as being obvious in view of Lin, (U.S. Pat. No. 5,071,520). The Lin et al. '520 patent also does not make the claimed invention obvious. The clear teaching of the Lin et al. '520 patent is to use a rough copper surface. If the device is not inherently rough (e.g. from electrodeposition), then the Lin et al. '520 patent teaches to purposely roughen the surface such as with [see, e.g., col. 1, lines. 34-48; col. 2, lines 41-44; col. 3, lines 18-28; col. 3, lines 42-44]. The Lin et al. '520 patent does not teach the application of the anti-tarnish treatment to a smooth surface as required by claims 1, 2-5, 6, and 8-12. There was no reason to believe that the application of an antitarnish coating that is effective To do so goes against the clear teaches of the Lin et al., '520 patent, and cannot be said to be obvious.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. The Office Action (page 3) indicates that "smooth" and "rough" are relative terms, but applicant submits that the term smooth was specifically defined in the specification, and as a result of the above amendments that definition has been incorporated into the claims. The prior art and the declaration of Dr. Brenneman establishes that electrodeposited foils and treated foils of the prior art do

not meet this requirement. The Office Action further states that the differences between Samples 1 and Samples 2 are difficult to detect, but as pointed out in the Affidavit of Dr. Brenneman, the differences are both readily apparent and significant to a person of ordinary skill on the art. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 726-7505.

Respectfully submitted,



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Date: February 12, 2007

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